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| 10/597,573 | 10/04/2007 | John G. Hildebrand | CCPC 0122 PUSA2 | 3029 |
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| BROOKS KUSHMAN P.C. 1000 TOWN CENTER TWENTY-SECOND FLOOR SOUTHFIELD, MI 48075 | | | BERHANE, YOSIEF H | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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| Office Action Summary | Application No. 10/597,573 | Applicant(s) HILDEBRAND ET AL. |
| | Examiner YOSIEF BERHANE | Art Unit 2467 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 10/04/2007.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-24 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement (PTO/SB/08) _____
 Paper No(s)/Mail Date 04/19/2007
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application
- 6) Other: _____

DETAILED ACTION

1. **Claims 1-24** have been examined and are pending.

Information Disclosure Statement

2. An initialed and dated copy of Applicant's IDS form 1449 submitted 04/19/2007 is attached to the instant office action.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

5. A person shall be entitled to a patent unless –
 6. (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. **Claims 1-9, 12-14** are rejected under 35 U.S.C. 102(e) as being anticipated by Publication 2005/0028206 to Cameron et al. (hereinafter Cameron).

8. **As per claim 1.** Cameron teaches a transport system, the system comprising:
 9. a source having a number of encoders configured to packetize broadcast television signals (fig. 2, box 24, as well as paragraph 0026, Cameron discloses a Head End retrieves multimedia television/Internet signals for broadcast from various sources such as satellites in the form of MPEG-compliant, Multi-Program Transport Streams and these signals are delivered to video encoders where they are converted to one or more IP Multicast Single-Program Transport Streams);
 10. and a bi-directional data communication unit located remotely from the source and configured to communicate packetized data signals between customer equipment (CE) and a network according to data transmission protocols (Fig. 2 box 18, as well as paragraph 0026, Cameron discloses that a DSLAM used to deliver IP packetized data received over a network to a subscriber. Also see paragraph 0035, where Cameron discloses that a user accesses internet network through an ADSL, where as shown in fig. 2 is coupled to a DSLAM for connecting to an external provider network),
 11. the BDCU including a multiplexer for integrating the packetized television signals with the packetized data signals for transport to the CE in an integrated transport stream defined as a function of the data transmission protocols (Fig. 2, as well Paragraph 0026, Cameron discloses that a DSLAM receives IP multicast signals that contain television/Internet data where the DSLAM delivers the IP Multicast signal to a subscriber's residence over an xDSL link such as an Asymmetric Digital Subscriber Line (ADSL), where it is received by an ADSL modem and delivered to a client server such as a set top box or a PC. Note, as disclosed in paragraph 0081 DSLAM concentrates traffic via time division multiplexing. Also see paragraph 0099).

12. **As per claim 2.** Cameron teaches wherein the source includes at least one multiplexer configured to combine the packetized television signals into a multiple program transport stream (MPTS) prior to transport to the BDCU (fig. 2, box 24, as well as paragraph 0026, Cameron discloses a Head End retrieves multimedia television/Internet signals for broadcast from various sources such as satellites, in the form of MPEG-compliant, Multi-Program Transport Streams).
13. **As per claim 3.** Cameron teaches a network communicator configured to encapsulate the MPTS for network communication prior to transport to the BDCU (fig. 2, box 24, as well as paragraph 0026, Cameron discloses a Head End retrieves multimedia television/Internet signals for broadcast from various sources such as satellites, in the form of MPEG-compliant, Multi-Program Transport Streams).
14. **As per claim 4.** Cameron teaches comprising a packet-switching network for transporting the encapsulated MPTS from the source to the BDCU (fig. 3 box 26 as well as paragraph 0035, Cameron discloses a broadband IP network).
15. **As per claim 5.** Cameron teaches a video server in configured for packetizing streaming video (fig. 2, box 40, Server Complex. Also see paragraph 0029)
16. and wherein the multiplexer of the BDCU is configured to integrate the packetized streaming video with the packetized television signals and data signals for transport to the CE in the integrated transport stream (Fig. 2, as well Paragraph 0026, Cameron discloses that a DSLAM receives IP multicast signals that contain television/Internet data where the DSLAM delivers the IP Multicast signal to a subscriber's residence over an xDSL link such as an Asymmetric Digital Subscriber Line (ADSL), where it is received by an ADSL modem and delivered to a client server such as a set top box or a PC).

17. **As per claim 6.** Cameron teaches comprising a network communicator configured to encapsulate the packetized streaming video signals for network communication prior to transport to the BDCU (fig. 2, box 24, as well as paragraph 0026, Cameron discloses a Head End retrieves multimedia television/Internet signals for broadcast from various sources such as satellites, in the form of MPEG-compliant, Multi-Program Transport Streams).
18. **As per claim 7.** Cameron teaches a method of providing multimedia signals from a source to customer equipment (CE) in a system having a bi-directional data communication unit (BDCU) configured for communicating data signals between the CE and a network, the method comprising: receiving the multimedia signals at the BDCU (Fig. 2, as well Paragraph 0026, Cameron discloses that a DSLAM receives IP multicast signals);
19. integrating the received multimedia signals with a BDCU transport; and transmitting the integrated transport from the BDCU to the CE (Fig. 2, as well Paragraph 0026, Cameron discloses that a DSLAM receives IP multicast signals that contain television/Internet data where the DSLAM delivers the IP Multicast signal to a subscriber's residence over an xDSL link such as an Asymmetric Digital Subscriber Line (ADSL), where it is received by an ADSL modem and delivered to a client server such as a set top box or a PC).
20. **As per claim 8.** Cameron teaches encapsulating the multimedia signals for network communication (fig. 2, box 24, as well as paragraph 0026, Cameron discloses a Head End retrieves multimedia television/Internet signals for broadcast from various sources such as satellites, in the form of MPEG-compliant, Multi-Program Transport Streams)
21. and transmitting the encapsulated multimedia signals over the network to the BDCU for integration with the data BDCU transport (Fig. 2, as well Paragraph 0026, Cameron discloses

that a DSLAM receives IP multicast signals that contain television/Internet data where the DSLAM delivers the IP Multicast signal to a subscriber's residence over an xDSL link such as an Asymmetric Digital Subscriber Line (ADSL), where it is received by an ADSL modem and delivered to a client server such as a set top box or a PC).

22. **As per claim 9.** Cameron teaches encapsulating the multimedia signals according to internet protocols (fig. 2, box 24, as well as paragraph 0026, Cameron discloses a Head End retrieves multimedia television/Internet signals for broadcast from various sources such as satellites in the form of MPEG-compliant, Multi-Program Transport Streams and these signals are delivered to video encoders where they are converted to one or more IP Multicast Single-Program Transport Streams).
23. **As per claim 12.** Cameron teaches multiplexing the multimedia signals into a transport and transmitting the transport to the BDCU for integration with the BDCU transport (Fig. 2, as well Paragraph 0026, Cameron discloses that a DSLAM receives IP multicast signals that contain television/Internet data where the DSLAM delivers the IP Multicast signal to a subscriber's residence over an xDSL link such as an Asymmetric Digital Subscriber Line (ADSL), where it is received by an ADSL modem and delivered to a client server such as a set top box or a PC).
24. **As per claim 13.** Cameron teaches configuring the transport according to MPEG-2 protocols (Paragraph 0033, Cameron discloses the set top box 22 includes decoding circuitry for decoding MPEG-1 and/or MPEG-2 as well as IP Multicast).

25. **As per claim 14.** Cameron teaches configuring the multimedia signals to include audio and video elements (Paragraph 0026, Cameron discloses that the encoder encodes analog video and audio inputs.).
26. **Claim 17** is rejected under 35 U.S.C. 102(e) as being anticipated by Publication **2009/0138966** to Krause et al. (hereinafter Krause).
27. **As per claim 17.** Krause teaches a method of transporting broadcast television signals, the method comprising: packetizing the television signals (Paragraph 0070, Krause discloses MPEG-2 packetization of source digital signals. Also see Paragraph 0064) .
28. integrating the television packets into a DOCSIS transport (Krause discloses in paragraph 0102 that a multiplexer combines broadcast, narrowcast and DOCSIS streams on the same downstream channel. Also see paragraph 0157 and 0169);
29. and transporting the packetized television signals through the DOCSIS transport to customer equipment (Paragraph 0169, Krause discloses that in providing streaming media services to PCs and other devices over DOCSIS, the video content could be sent either natively in the MPEG-TS sublayer or encapsulated in IP according to the DOCSIS MAC layer).

Claim Rejections - 35 USC § 103

30. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

31. (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
32. **Claims 10-11 and 15-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cameron as applied to **claims 1-9 and 12-14** above and further in view of Publication **2003/0200548** to Baran et al. (hereinafter Baran).
33. **As per claim 10.** Cameron does not disclose expressly: configuring the multimedia signals according to real-time transport protocols (RTP) prior to encapsulation.
34. Baran discloses in Paragraph 0189 MPEG transport streams may be encapsulated in raw Ethernet, or may be encapsulated via IP, UDP, and RTP depending on system configuration options.
35. Baran and Cameron are analogous art because they are from similar fields of endeavor dealing specifically with processing multi-program transport stream.
36. At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the system of Cameron by encapsulating multimedia signals using RTP, as suggested by Cameron.
37. The rationale for doing so would have been to enhance flexibility and efficiency by incorporating various protocols to conform to specific system configurations (Paragraph 0189, Baran).

38. Therefore it would have been obvious to combine Baran with Cameron for the benefit of enhancing flexibility and efficiency in encapsulating multimedia data to obtain the invention as specified in claim 10.
39. **As per claim 11.** the combination of Cameron and Baran teach configuring the RTP multimedia signals according to user datagram protocols (UDP) or transmission control protocols (TCP) prior to encapsulation (Baran discloses in Paragraph 0189 MPEG transport streams may be encapsulated in raw Ethernet, or may be encapsulated via IP, UDP, and RTP depending on system configuration options.).
40. **As per claim 15.** the combination of Cameron and Baran teach configuring the multimedia signals to include program specific information (PSI) or system information (Paragraph 0012, Baran discloses constructing valid Program Specific Information (PSI) and System Information (SI) for the output multiplexes created at the gigaQAM unit).
41. **As per claim 16.** the combination of Cameron and Baran teach configuring the BDCU for communicating the integrated signals according to data over cable service interface specifications (DOCSIS) transport (Paragraph 0180, Baran discloses that The CMTS unit 600 also supports any video specific modes mandated by the DOCSTS standard).
42. **Claims 18-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Krause as applied to claim 17 above and further in view of Publication **2003/0058887** to Dworkin et al. (hereinafter Dworkin).

43. **As per claim 18.** Krause teaches multiplexing the packetized television signals into a MPEG-2 transport at a cable headend (Paragraph 0070, Krause discloses MPEG-2 packetization of source digital signals),
44. Krause does not disclose expressly: transmitting the MPEG-2 transport from the headend to a cable modem termination station, and integrating the television packets carried in the MPEG-2 transport with the DOCSIS transport at the CMTS.
45. Dworkin discloses in fig. 1 and 4 as well paragraph 0006, the media access control device of a CMTS identifies which of the received MPEG video frames are null. The media access control device then replaces the null MPEG video frames with DOCSIS data frames to produce an output data stream.
46. Dworkin and Krause are analogous art because they are from similar fields of endeavor dealing specifically with processing and communicating MPEG transport streams.
47. At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the system of Krause by integrating MPEG data with DOCSIS at a CMTS as suggested by Dworkin.
48. The rationale for doing so would have been to enhance network performance by conserving network bandwidth in a cable modem system (Paragraph 0005, Dworkin)
49. Therefore it would have been obvious to combine Dworkin with Krause for the benefit of enhancing bandwidth utilizing and overall network performance to obtain the invention as specified in claim 18.
50. **As per claim 19.** the combination of Krause and Dworkin teach encapsulating the MPEG-2 transport stream according to internet protocols (Paragraph 0154, Krause discloses

transport interface sourced by the server (Interface V1) is raw UDP/IP over a Gigabit Ethernet physical link. One to seven MPEG transport packets can follow the UDP header)

51. and transporting the MPEG-2 transport from the headend to the CMTS (fig. 1, Dworkin disclose receiving MPEG transport streams from a MPEG multiplexer at a CMTS)
52. over a packet switching network as a function of the IP (Paragraph 0036, Krause discloses that The network switch 140 provides connectivity between the various headend modules and any edge modules).
53. **As per claim 20.** the combination of Krause and Dworkin teach a cable system for transporting broadcast television signals, the system comprising: a headend configured to packetize the television signals (Paragraph 0070, Krause discloses MPEG-2 packetization of source digital signals);
54. a cable modem termination station in communication with the headend (Fig. 1, CMTS receives MPEG transport stream from an MPEG multiplexer)
55. for integrating the television packets into a DOCSIS transport (Krause discloses in paragraph 0102 that a multiplexer combines broadcast, narrowcast and DOCSIS streams on the same downstream channel. Also see paragraph 0157 and 0169);
56. and customer equipment configured to recover the packetized television signals from the DOCSIS transport (Paragraph 0169, Krause discloses that in providing streaming media services to PCs and other devices over DOCSIS, the video content could be sent either natively in the MPEG-TS sublayer or encapsulated in IP according to the DOCSIS MAC layer).

57. **As per claim 21.** the combination of Krause and Dworkin teach wherein the headend includes a multiplexer for combining the packetized television signals into a MPEG-2 transport (Paragraph 0070, Krause discloses MPEG-2 packetization of source digital signals)
58. for output to the CMTS (Fig. 1, CMTS receives MPEG transport stream from an MPEG multiplexer).
59. **As per claim 22.** the combination of Krause and Dworkin teach a network communicator in communication with the headend and a packet switching network associate with the headend (Paragraph 0036, Krause discloses that the network switch provides connectivity between the various headend modules and any edge module),
60. the network communicator configured to encapsulate the MPEG-2 transport stream according to internet protocols for transport over the packet switching network (Paragraph 0154, Krause discloses transport interface sourced by the server (Interface V1) is raw UDP/IP over a Gigabit Ethernet physical link. One to seven MPEG transport packets can follow the UDP header)
61. to the CMTS (Fig. 1, CMTS receives MPEG transport stream from an MPEG multiplexer).
62. **As per claim 23.** the combination of Krause and Dworkin teach wherein headend includes a video server configured to packetize streaming video signals (Paragraph 0154, Krause discloses transport interface sourced by the server)
63. and wherein the CMTS is configured to integrated the streaming video signals with the television packets into the DOCSIS transport (Krause discloses in paragraph 0102 that a

multiplexer combines broadcast, narrowcast and DOCSIS streams on the same downstream channel. Also see paragraph 0157 and 0169).

64. **As per claim 24.** the combination of Krause and Dworkin teach a network communicator in communication with the headend and a packet switching network associate with the headend (Paragraph 0036, Krause discloses that the network switch provides connectivity between the various headend modules and any edge module),
65. the network communicator configured to encapsulate the packetized streaming video signals according to internet protocols (IP) for transport over the packet switching network (Paragraph 0154, Krause discloses transport interface sourced by the server (Interface V1) is raw UDP/IP over a Gigabit Ethernet physical link. One to seven MPEG transport packets can follow the UDP header)
66. to the CMTS (Fig. 1, CMTS receives MPEG transport stream from an MPEG multiplexer).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yosief Berhane whose telephone number is (571) 270-7164. The examiner can normally be reached at 9:00-6:00 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pankaj Kumar can be reached at (571) 272-3011. The fax phone number for the organization where this application or proceeding is assigned is. 571-273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/YOSIEF BERHANE/

Examiner, Art Unit 2467

/Hong Cho/

Primary Examiner, Art Unit 2467